



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/741,856

12/22/2000

Richard P. Modelski

P 270183 NOR-13175BA

8575

34845

7590

01/23/2006

STEUBING MCGUINNESS & MANARAS LLP  
125 NAGOG PARK  
ACTON, MA 01720

EXAMINER

MOORE JR, MICHAEL J

ART UNIT

PAPER NUMBER

2666

DATE MAILED: 01/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/741,856

Applicant(s)

MODELSKI ET AL.

Examiner

Michael J. Moore, Jr.

Art Unit

2666

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9, 12-22, 25-35, 38 and 39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9, 12-22, 25-35, 38 and 39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims **1-3, 8, 9, 12-16, 21, 22, 25-29, and 34, 35, 38, and 39** are rejected under 35 U.S.C. 102(e) as being anticipated by Albert et al. (U.S. 6,650,641) ("Albert"). Albert teaches all of the limitations of the specified claims with the reasoning that follows.

Regarding claim 1, "a method for performing a plurality of filter operations on a data packet using an instruction" is anticipated by the method shown in Figure 13.

"Receiving an instruction to filter at least one data packet, the at least one data packet comprising a plurality of data fields" is anticipated by a forwarding agent receiving fixed affinities (instruction) from a service manager that specify actions to be performed on particular packets as spoken of on column 13, lines 19-29.

"Retrieving a filter result based on the received instruction" is anticipated by step 1304 of Figure 13 where a forwarding agent finds an affinity that matches (filter result) an incoming packet as spoken of on column 29, lines 59-61.

Lastly, "performing at least two of a plurality of filter operations on at least one data field in the data packet in accordance with the retrieved filter result" is anticipated

by the source/destination IP address change, source/destination port change, and checksum adjustment actions (filter operations) shown in steps 1310, 1312, 1314, 1316, and 1318 of Figure 13 that are performed in response to the affinity/packet matching (filter result) step 1304 as spoken of on column 30, lines 1-12.

Regarding claims **2, 15, and 28**, “processing the at least one data packet based on a determination of the performed filter operations” is anticipated by the forwarding (processing) of the packet in step 1320 of Figure 13 in response to the actions 1310, 1312, 1314, 1316, and 1318.

Regarding claims **3, 16, and 29**, “wherein the instruction comprises a set of data bits” is anticipated by fixed affinity 600 shown in Figure 6 composed of key, flag, and address fields (data bits).

Regarding claims **8, 21, and 34**, “wherein the processing of the data packet comprises classifying the data packet” is anticipated by the forwarding (processing) of the packet in step 1320 of Figure 13 in response to the actions 1310, 1312, 1314, 1316, and 1318.

Regarding claims **9, 22, and 35**, “wherein the data packet comprises one of SONET, ATM, Ethernet, HDLC, PPP, IP, TCP, and UDP data packet” is anticipated by IP packet 980 shown in Figure 9E.

Regarding claims **12, 25, and 38**, “wherein the filter operations correspond to the data bits of the instruction” is anticipated by step 1304 of Figure 13 where a forwarding agent finds an affinity that matches (filter result) an incoming packet as spoken of on column 29, lines 59-61.

Regarding claims **13, 26, and 39**, “wherein the retrieving the filter result based on the received instruction comprises a radix search” is anticipated by step 1304 of Figure 13 where a forwarding agent finds (search) an affinity that matches (filter result) an incoming packet as spoken of on column 29, lines 59-61.

Regarding claim **14**, “an apparatus for performing a plurality of filter operations on a data packet using an instruction” is anticipated by the forwarding agent 250 shown in Figure 2B.

“A memory configured to store a filter result, the filter result being received from the memory based on an instruction, the instruction being configured to filter at least one data packet, the at least one data packet comprising a plurality of data fields” is anticipated by a forwarding agent 250 containing memory 254 (See Figure 2B) that receives fixed affinities (instruction) from a service manager that specify actions to be performed on particular packets as spoken of on column 13, lines 19-29, as well as step 1304 of Figure 13 where a forwarding agent finds an affinity that matches (filter result) an incoming packet as spoken of on column 29, lines 59-61.

Lastly, “a processor coupled to the memory, the processor configured to perform at least two of a plurality of filter operations on at least one data field in the data packet in accordance with the filter result” is anticipated by forwarding agent 250 containing processor 252 coupled to memory 254 (See Figure 2B) that performs source/destination IP address change, source/destination port change, and checksum adjustment actions (filter operations) shown in steps 1310, 1312, 1314, 1316, and 1318 of Figure 13 in

response to the affinity/packet matching (filter result) step 1304 as spoken of on column 30, lines 1-12.

Regarding claim 27, "a computer-readable medium encoded with a program for a computer" is anticipated by the method shown in Figure 13 performed by a forwarding agent 250 of Figure 2B containing memory 254 (computer readable medium).

"Receiving an instruction to filter at least one data packet, the at least one data packet comprising a plurality of data fields" is anticipated by a forwarding agent receiving fixed affinities (instruction) from a service manager that specify actions to be performed on particular packets as spoken of on column 13, lines 19-29.

"Retrieving a filter result based on the received instruction" is anticipated by step 1304 of Figure 13 where a forwarding agent finds an affinity that matches (filter result) an incoming packet as spoken of on column 29, lines 59-61.

Lastly, "performing at least two of a plurality of filter operations on at least one data field in the data packet in accordance with the retrieved filter result" is anticipated by the source/destination IP address change, source/destination port change, and checksum adjustment actions (filter operations) shown in steps 1310, 1312, 1314, 1316, and 1318 of Figure 13 that are performed in response to the affinity/packet matching (filter result) step 1304 as spoken of on column 30, lines 1-12.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims **4-7, 17-20, and 30-33** are rejected under 35 U.S.C. 103(a) as being unpatentable over Albert et al. (U.S. 6,650,641) ("Albert").

Regarding claims **4, 17, and 30**, Albert teaches fixed affinity 600 shown in Figure 6 composed of key, flag, and address fields (data bits). Albert does not explicitly teach a 32-bit instruction. However, at the time of the invention, it would have been obvious to one skilled in the art to use a fixed affinity 600 of Albert that contains 32 bits in order to provide a robust method of matching an affinity with an incoming packet and performing corresponding actions on the packet as spoken of on column 30, lines 1-12.

Regarding claims **5, 18, and 31**, Albert teaches source/destination IP address change, source/destination port change, and checksum adjustment actions (filter operations) shown in steps 1310, 1312, 1314, 1316, and 1318 of Figure 13 that are performed in response to the affinity/packet matching (filter result) step 1304 as spoken of on column 30, lines 1-12. Albert does not explicitly teach 32 filter operations.

However, at the time of the invention, it would have been obvious to one skilled in the art to perform more filter operations than shown in Figure 13 of Albert in order to provide a more robust packet filtering process.

Regarding claims **6, 19, and 32**, Albert teaches fixed affinity 600 shown in Figure 6 composed of key, flag, and address fields (data bits). Albert does not explicitly teach a 64-bit instruction. However, at the time of the invention, it would have been obvious to one skilled in the art to use a fixed affinity 600 of Albert that contains 64 bits in order to provide a robust method of matching an affinity with an incoming packet and performing corresponding actions on the packet as spoken of on column 30, lines 1-12.

Regarding claims **7, 20, and 33**, Albert teaches source/destination IP address change, source/destination port change, and checksum adjustment actions (filter operations) shown in steps 1310, 1312, 1314, 1316, and 1318 of Figure 13 that are performed in response to the affinity/packet matching (filter result) step 1304 as spoken of on column 30, lines 1-12. Albert does not explicitly teach 64 filter operations. However, at the time of the invention, it would have been obvious to one skilled in the art to perform more filter operations than shown in Figure 13 of Albert in order to provide a more robust packet filtering process.

### ***Response to Arguments***

6. Applicant's arguments filed 11/2/2005 have been fully considered but they are not persuasive.

Regarding claims **1, 14, and 27**, Applicant argues that *Albert et al.* (U.S. 6,650,641) does not teach or suggest the performance of "at least two of a plurality of

filter operations on at least one data field in the data packet in accordance with the retrieved filter result” as the Applicants have claimed.

However, as provided above, *Albert et al.* teaches source/destination IP address change, source/destination port change, and checksum adjustment actions (filter operations) shown in steps 1310, 1312, 1314, 1316, and 1318 of Figure 13 that are performed in response to the affinity/packet matching (filter result) step 1304 as spoken of on column 30, lines 1-12. The source/destination IP address, source/destination port, and checksum values are located in the packet header (data field) as spoken of on column 30, lines 1-12. It is therefore held that *Albert et al.* teaches performing at least two filter operations on a data field (packet header) of a data packet in accordance with a filter result.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. McRae (U.S. 6,970,462), Ambe et al. (U.S. 6,876,653), and Kalkunte et al. (U.S. 2002/0051448) are other references pertinent to this application.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

Art Unit: 2666

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Moore, Jr. whose telephone number is (571) 272-3168. The examiner can normally be reached on Monday-Friday (8:30am - 5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S. Rao can be reached at (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael J. Moore, Jr.  
Examiner  
Art Unit 2666

mjm MM



DANG TON  
PRIMARY EXAMINER